AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application:

1. (currently amended): A fixing apparatus comprising:

a heating member;

a coil configured to apply a high frequency magnetic field for induction heating to the heating member;

a high-frequency wave generating circuit that has a switching element and that is configured to generate high frequency power for generating the high frequency magnetic field from the coil by ON-OFF driving the switching element;

a temperature sensor configured to detect ~~the temperature~~ a temperature T of the heating member;

a detection section configured to detect an amount of upward or downward variation per unit time of the temperature T ~~temperature~~ detected by the temperature sensor; and

an output control section configured to increase or decrease an ON-OFF duty of the switching element ~~the output of the coil~~ by an amount corresponding to a result of detection by the detection section, while holding the detected temperature T detected by the ~~of the~~ temperature sensor within an initially set range,

wherein the output control section is configured to determine: (a) which of a plurality of temperature ranges, including the initially set range, the detected temperature T falls within; and (b) the ON-OFF duty of the switching element in accordance with the result of the temperature range determination and the variation detected by the detection section.

2. (original): A fixing apparatus according to claim 1, wherein said unit time is a value proportional to the magnitude of a heating capacity of the heating member.

3. (original): A fixing apparatus according to claim 1, further comprising a pressure applying member configured to, while being set in pressure contact with the heating member, convey a paper sheet for fixing in a manner to sandwich the paper sheet relative to the heating member.

4. (currently amended): A fixing apparatus comprising:

a heating member;

a coil for induction heating which is positioned near the heating member;

a resonance circuit including the coil as a constituent element;

a switching element configured to excite the resonance circuit;

an oscillator configured to output an ON-OFF signal for ON-OFF driving of the switching element;

a temperature sensor configured to detect ~~the temperature~~ a temperature T of the heating member;

a detection section configured to detect an amount of variation per unit time of the ~~temperature~~ temperature T detected by the temperature sensor; and

an output control section configured to increase or decrease the duty ~~of an~~ of the ON-OFF signal outputted from the oscillator by a value corresponding to a result of detection by the detection section, while holding the detected temperature T detected by the ~~of the~~ temperature sensor within an initially set range,

wherein the output control section is configured to determine: (a) which of a plurality of temperature ranges, including the initially set range, the detected temperature T falls within; and (b) the duty of the ON-OFF signal in accordance with the result of the temperature range determination and the variation detected by the detection section.

5. (original): A fixing apparatus according to claim 4, wherein said unit time is a value proportional to the magnitude of a heat capacity of said heating member.

6. (original): A fixing apparatus according to claim 4, further comprising a pressure applying member configured to, while being set in pressure contact with the heating member, convey a paper sheet for fixing in a manner to sandwich the paper sheet relative to the heating member.

7. (currently amended): An image forming apparatus comprising:

a heating member;

a coil configured to apply a high frequency magnetic field for induction heating to the heating ~~body~~ member;

a high-frequency wave generating circuit that has a switching element and that is configured to generate high frequency power for generating the high frequency magnetic field from the coil by ON-OFF driving the switching element;

a temperature sensor configured to detect ~~the temperature~~ a temperature T of the heating ~~body~~ member;

a detection section configured to detect an amount of upward or downward variation per unit time of the temperature T ~~temperature~~ detected by the temperature sensor; and

an output control section configured to increase or decrease an ON-OFF duty of the switching element ~~the output of the coil~~ by an amount corresponding to a result of detection by the detection ~~section~~ section, while holding the detected temperature T detected by the temperature sensor within an initially set range,

wherein the output control section is configured to determine: (a) which of a plurality of temperature ranges, including the initially set range, the detected temperature T falls within; and (b) the ON-OFF duty of the switching element in accordance with the result of the temperature range determination and the variation detected by the detection section.

8. (original): An image forming apparatus according to claim 7, wherein said unit time is a value proportional to the magnitude of a heat capacity of the heating member.

9. (original): An image forming apparatus according to claim 7, further comprising a pressure applying member configured to, while being set in pressure contact with the heating member, convey a paper sheet for fixing in a manner to sandwich the paper sheet relative to the heating member.

10. (New) A fixing apparatus according to claim 1,

wherein the output control section determines which of the plurality of initially set ranges $T>Ta$, $Ta \geqq T>Tb$, $Tb \geqq T>Tc$, $Tc \geqq T>Td$, $Td \geqq T$ the detected temperature T falls within;

wherein, in a case in which the detected temperature T falls within the range T>Ta, the output control section decreases the ON-OFF duty of the switching element by a predetermined value;

wherein, in a case in which the detected temperature T falls within the range Ta≧T>Tb, if the result of detection by the detection section is an amount of upward variation or 0, the output control section decreases the ON-OFF duty of the switching element by an amount corresponding to a result of comparison between the result of detection by the detection section and a plurality of initially set values, and if the result of detection by the detection section is an amount of downward variation, the output control section also decreases the ON-OFF duty of the switching element by an amount corresponding to the result of comparison between the result of detection by the detection section and the initially set values;

wherein, in a case in which the detected temperature T falls within the range Tb≧T>Tc, if the result of detection by the detection section is an amount of upward variation or 0, the output control section decreases the ON-OFF duty of the switching element by an amount corresponding to a result of comparison between the result of detection by the detection section and the initially set values, and if the result of detection by the detection section is an amount of downward variation, the output control section increases the ON-OFF duty of the switching element by an amount corresponding to the result of comparison between the result of detection by the detection section and the initially set values;

wherein, in a case in which the detected temperature T falls within the range Tc≧T>Td, if the result of detection by the detection section is an amount of upward variation or 0, the output control section increases the ON-OFF duty of the switching element by an amount corresponding to a result of comparison between the result of detection by the detection section and the initially set values, and if the result of detection by the detection section is an amount of downward variation, the output control section also increases the ON-OFF duty of the switching element by an amount corresponding to the result of comparison between the result of detection by the detection section and the initially set values; and

wherein, in a case in which the detected temperature T falls within the range Td≧T, the output control section increases the ON-OFF duty of the switching element by the predetermined value.

11. (New) A fixing apparatus according to claim 4,

wherein the output control section determines which of the plurality of initially set ranges $T>Ta$, $Ta\geqq T>Tb$, $Tb\geqq T>Tc$, $Tc\geqq T>Td$, $Td\geqq T$ the detected temperature T falls within;

wherein, in a case in which the detected temperature T falls within the range $T>Ta$, the output control section decreases the duty of the ON-OFF signal by a predetermined value;

wherein, in a case in which the detected temperature T falls within the range $Ta\geqq T>Tb$, if the result of detection by the detection section is an amount of upward variation or 0, the output control section decreases the duty of the ON-OFF signal by an amount corresponding to a result of comparison between the result of detection by the detection section and a plurality of initially set values, and if the result of detection by the detection section is an amount of downward variation, the output control section also decreases the duty of the ON-OFF signal by an amount corresponding to the result of comparison between the result of detection by the detection section and the initially set values;

wherein, in a case in which the detected temperature T falls within the range $Tb\geqq T>Tc$, if the result of detection by the detection section is an amount of upward variation or 0, the output control section decreases the duty of the ON-OFF signal by an amount corresponding to a result of comparison between the result of detection by the detection section and the initially set values, and if the result of detection by the detection section is an amount of downward variation, the output control section increases the duty of the ON-OFF signal by an amount corresponding to the result of comparison between the result of detection by the detection section and the initially set values;

wherein, in a case in which the detected temperature T falls within the range $Tc\geqq T>Td$, if the result of detection by the detection section is an amount of upward variation or 0, the output control section increases the duty of the ON-OFF signal by an amount corresponding to a result of comparison between the result of detection by the detection section and the initially set values, and if the result of detection by the detection section is an amount of downward variation, the output control section also increases the duty of the ON-OFF signal by an amount corresponding to the result of comparison between the result of detection by the detection section and the initially set values; and

wherein, in a case in which the detected temperature T falls within the range $Td\geqq T$, the output control section increases the duty of the ON-OFF signal by the predetermined value.

12. (New) An image forming apparatus according to claim 7,

wherein the output control section determines which of the plurality of initially set ranges $T>Ta$, $Ta \geqq T>Tb$, $Tb \geqq T>Tc$, $Tc \geqq T>Td$, $Td \geqq T$ the detected temperature T falls within;

wherein, in a case in which the detected temperature T falls within the range $T>Ta$, the output control section decreases the ON-OFF duty of the switching element by a predetermined value;

wherein, in a case in which the detected temperature T falls within the range $Ta \geqq T>Tb$, if the result of detection by the detection section is an amount of upward variation or 0, the output control section decreases the ON-OFF duty of the switching element by an amount corresponding to a result of comparison between the result of detection by the detection section and a plurality of initially set values, and if the result of detection by the detection section is an amount of downward variation, the output control section also decreases the ON-OFF duty of the switching element by an amount corresponding to the result of comparison between the result of detection by the detection section and the initially set values;

wherein, in a case in which the detected temperature T falls within the range $Tb \geqq T>Tc$, if the result of detection by the detection section is an amount of upward variation or 0, the output control section decreases the ON-OFF duty of the switching element by an amount corresponding to a result of comparison between the result of detection by the detection section and the initially set values, and if the result of detection by the detection section is an amount of downward variation, the output control section increases the ON-OFF duty of the switching element by an amount corresponding to the result of comparison between the result of detection by the detection section and the initially set values;

wherein, in a case in which the detected temperature T falls within the range $Tc \geqq T>Td$, if the result of detection by the detection section is an amount of upward variation or 0, the output control section increases the ON-OFF duty of the switching element by an amount corresponding to a result of comparison between the result of detection by the detection section and the initially set values, and if the result of detection by the detection section is an amount of downward variation, the output control section also increases the ON-OFF duty of the switching element by an amount corresponding to the result of comparison between the result of detection by the detection section and the initially set values; and

wherein, in a case in which the detected temperature T falls within the range $Td \geqq T$, the output control section increases the ON-OFF duty of the switching element by the predetermined value.